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Batalaris et al.

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(54) **CHILD CAR SEAT ADAPTED FOR FRONTWARD AND REARWARD FACING CONFIGURATIONS**

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(52) U.S. Cl. **297/253; 297/256.14**

(58) Field of Search **297/256.14, 253**

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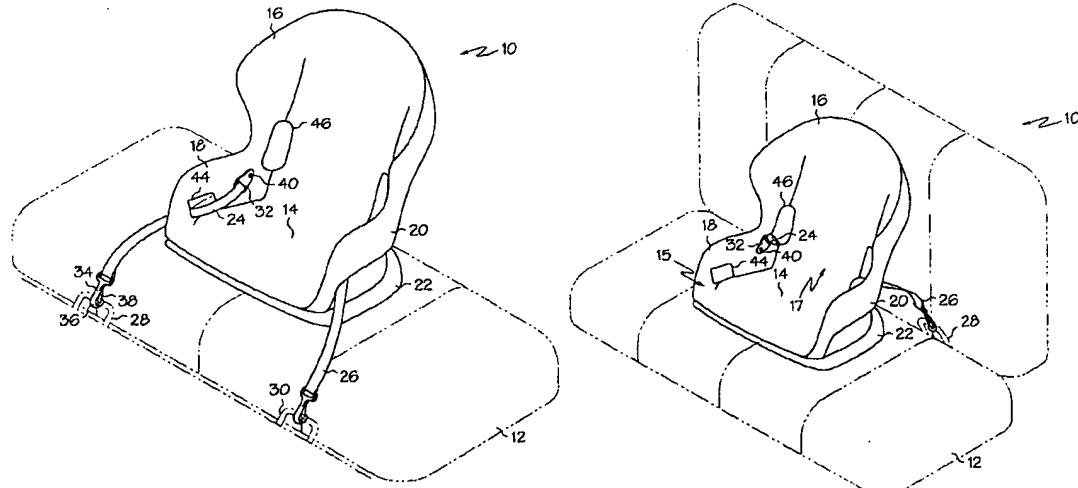
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(57) **ABSTRACT**

A child car seat is configured for attachment to vehicle anchor points in at least two configurations including a frontward facing configuration and a rearward facing configuration. The child car seat includes an exterior portion and an interior portion, the interior portion defining a receiving area for a child. A front area of the interior portion is generally open and a rear area of the interior portion is generally closed by a back section. A first structure is positioned on the interior portion for securing a first strap thereto such that the first strap is positioned interiorly of the seat and is capable of extending both toward the front area and the rear area, and a second structure is positioned on the interior portion for securing a second strap thereto such that the second strap is positioned interiorly of the seat and is capable of facing both toward the front area and the rear area.

13 Claims, 6 Drawing Sheets



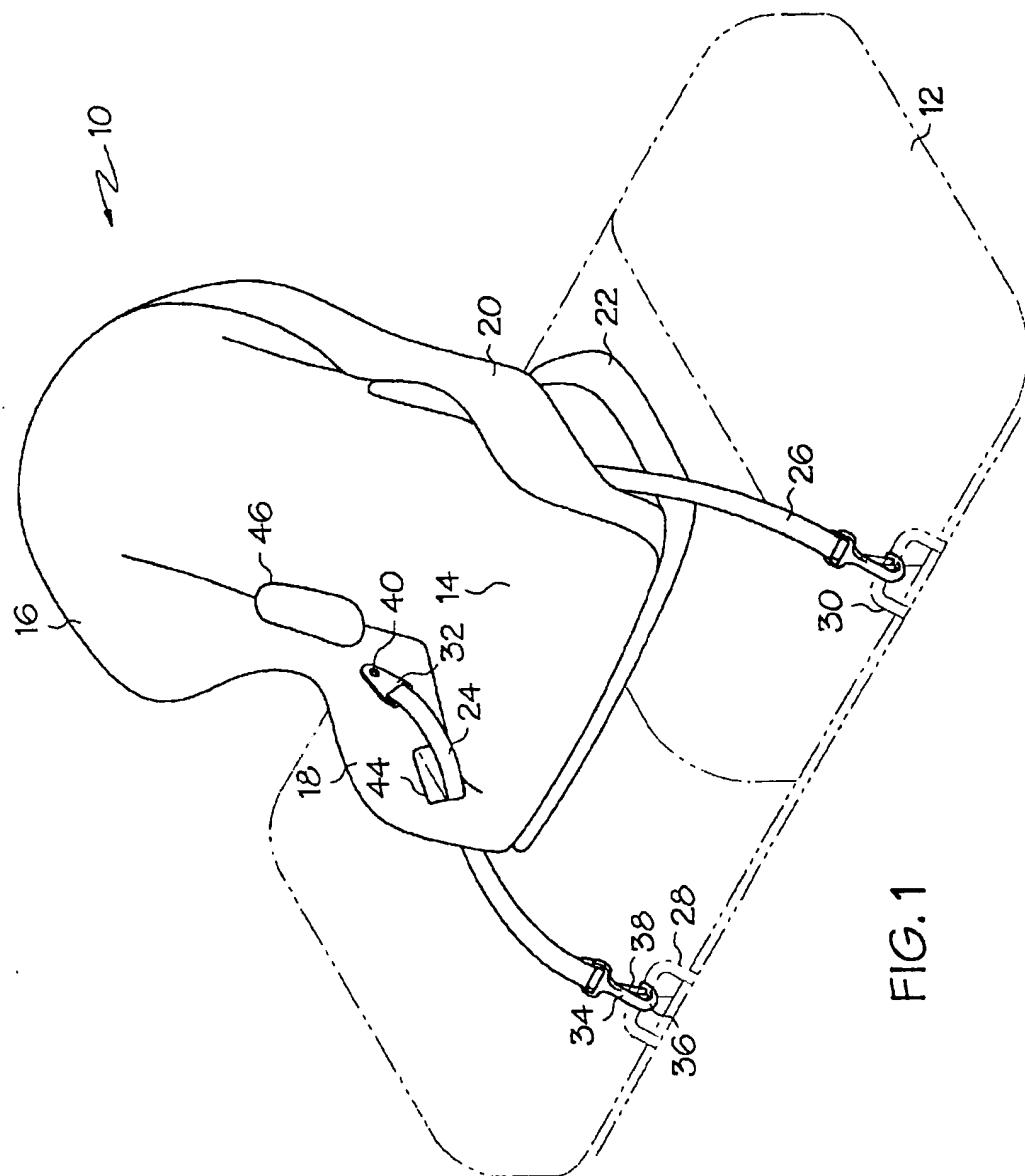
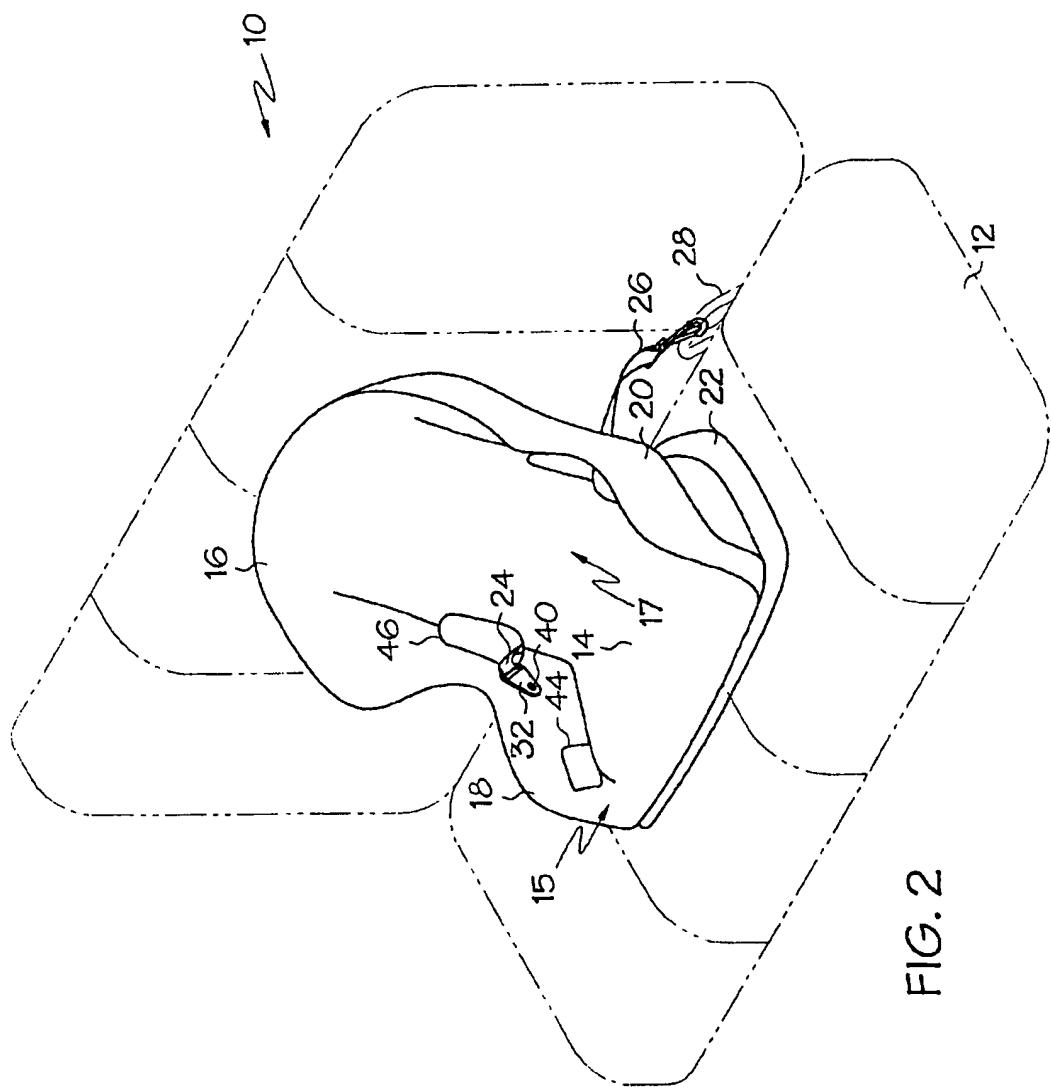


FIG. 1



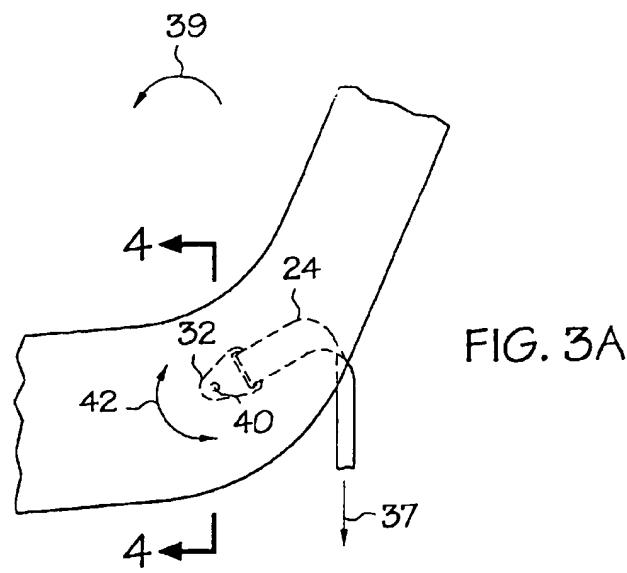
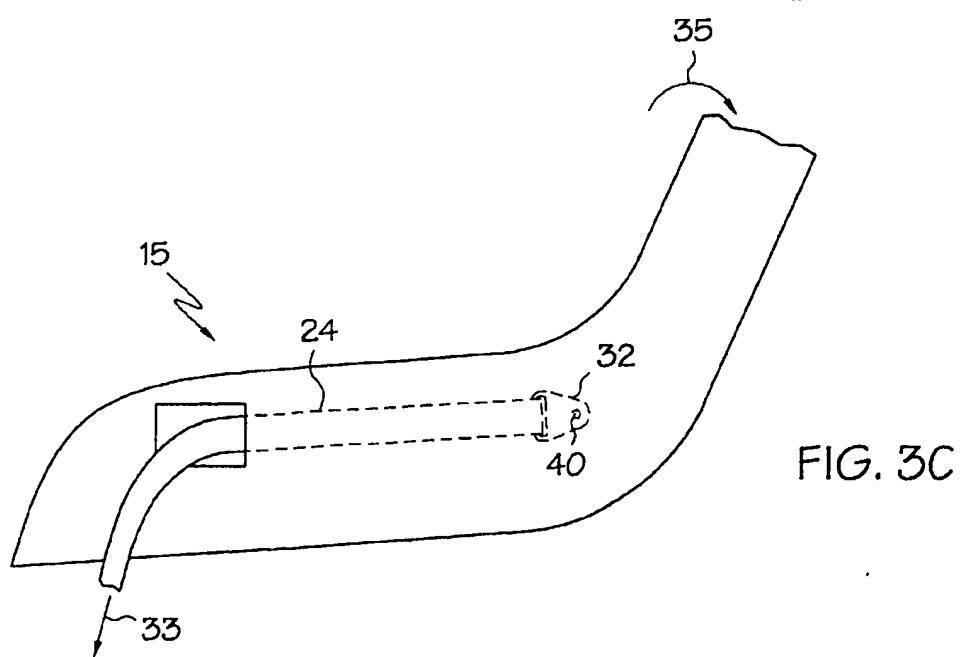
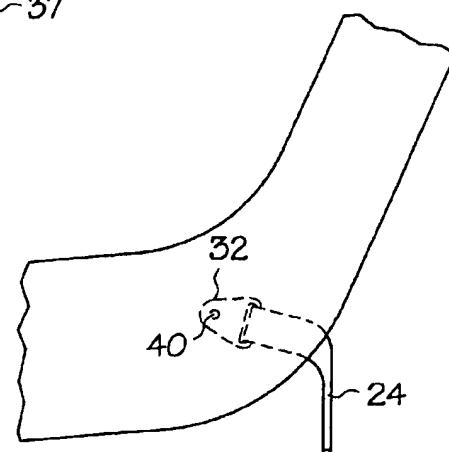
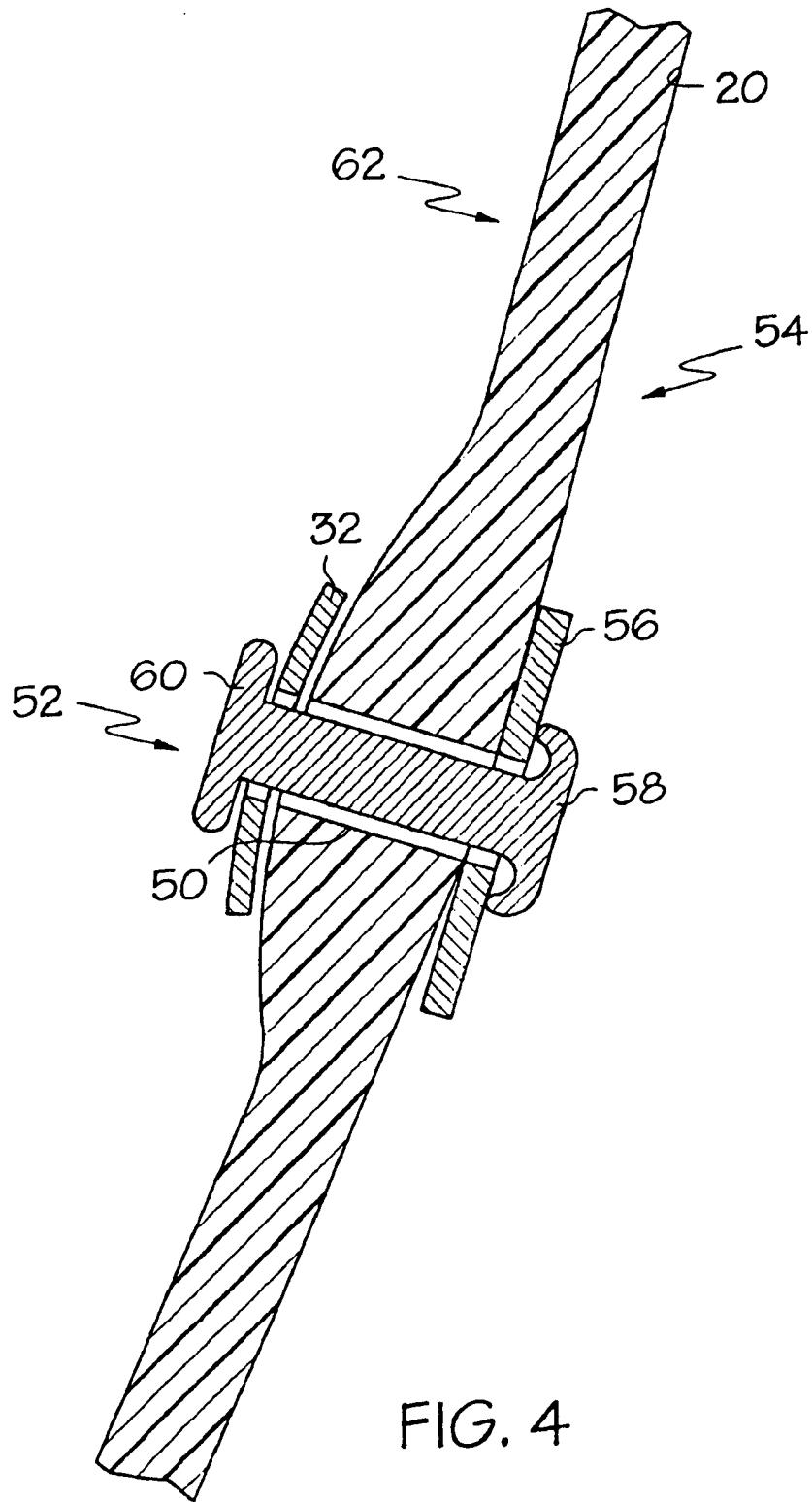


FIG. 3B





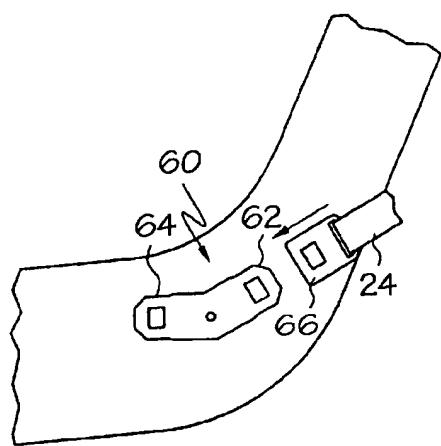


FIG. 5

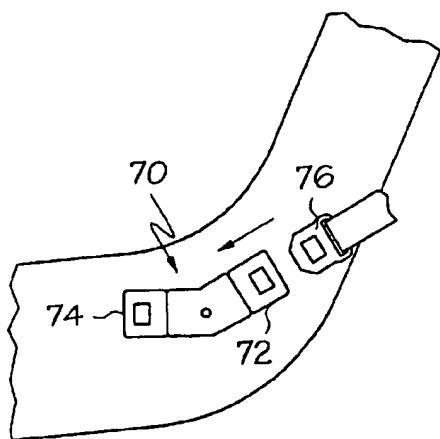


FIG. 6

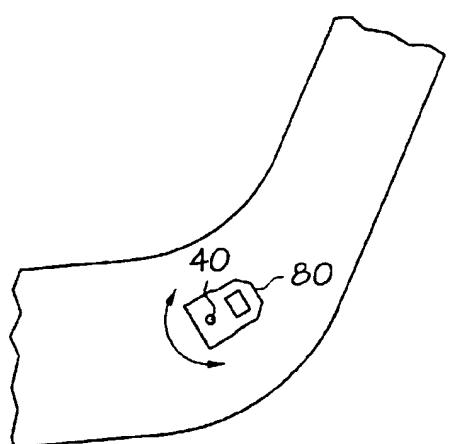


FIG. 7

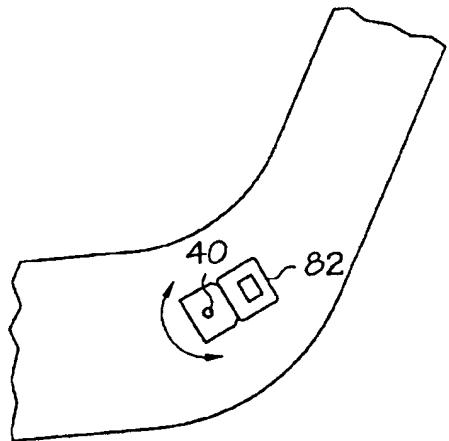


FIG. 8

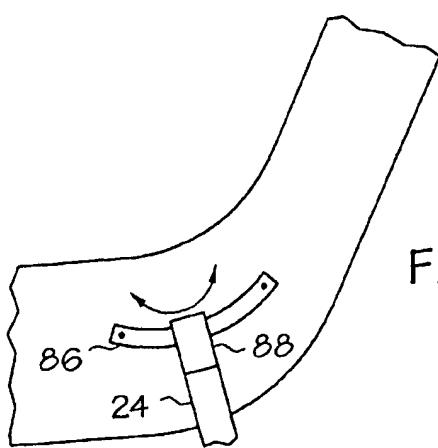


FIG. 9

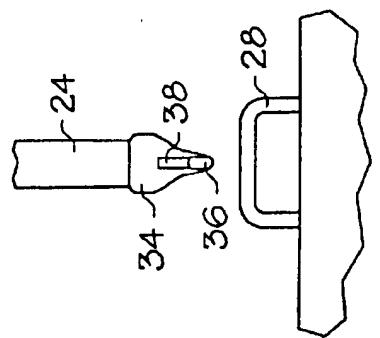


FIG. 11

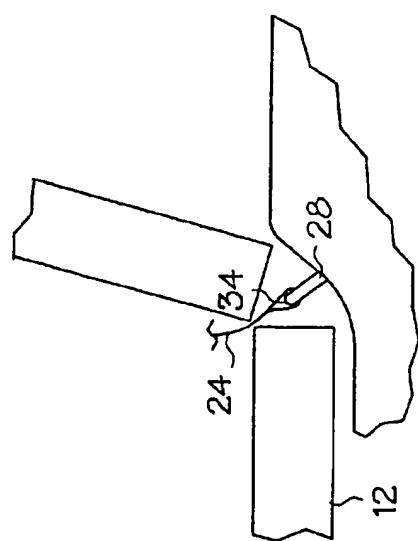


FIG. 10

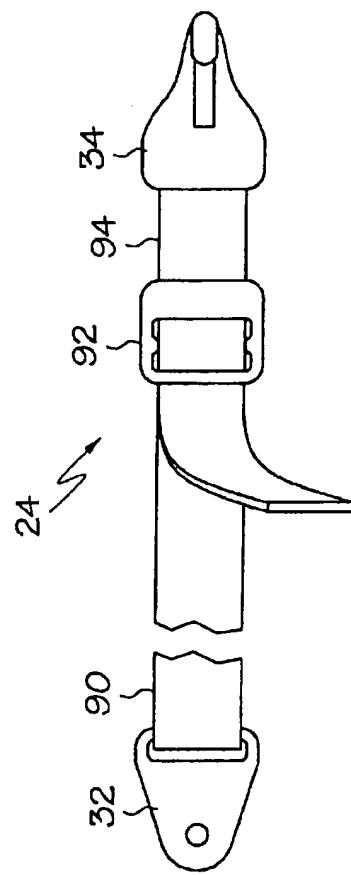


FIG. 12

**CHILD CAR SEAT ADAPTED FOR
FRONTWARD AND REARWARD FACING
CONFIGURATIONS**

TECHNICAL FIELD

This invention pertains generally to infant or toddler car seats, as well as hybrid booster seats, and more specifically to such seats which are adapted for facing in both a frontward or rearward direction and which are capable of being connected to anchor points provided in vehicles.

BACKGROUND OF THE INVENTION

As used herein the terminology "child car seat" refers to car seats for children of all ages, including infants and toddlers, and likewise includes car seats commonly referred to as hybrid booster seats or booster seats. The term "vehicle seat" is used to refer to the back or front seat of any vehicle type, including, but not limited to cars, vans, minivans, trucks, and sport utility vehicles.

A typical child car seat is secured to a vehicle such as an automobile with the vehicle seat belt. Under one standard procedure, the vehicle seat belt passes through two opposed openings in the side rails of the child car seat and behind the rear of the seating surface of the seat. In the usual construction of these seats, the two openings are not connected and offer no support or "path" for the vehicle seat belt as it passes from one opening to the other opening.

As an alternative, a child car seat having a recessed area in the back through which the vehicle seat belt passes is provided in U.S. Pat. No. 5,458,398. Apertures in the left and right sides of the recessed area allow the vehicle seat belt to be threaded through one opening, pass across the recessed area, and exit through the other opening. The recess is partially covered with a fixed molded panel, leaving a restricted opening at the bottom of the recessed belt path sufficient to allow the vehicle seat belt to be threaded from the front of the seat. The padded covering of the seat has a slit adjacent the opening of the bottom of the belt path so as to provide access to the belt path when the automobile seat belt is threaded therethrough.

In newer model vehicles, vehicle seats are being constructed to better facilitate connection of child car seats. For example, new standards are being promulgated which will require the back seats of vehicles to include anchor points for attaching child car seats. These anchor points are intended to provide more stable attachment of such seats. Accordingly, new child car seat constructions must be developed in order to best take advantage of such anchor points.

SUMMARY OF THE INVENTION

In one aspect of the present invention, a child car seat is configured for attachment to vehicle anchor points in at least two configurations including a frontward facing configuration and a rearward facing configuration. The child car seat includes an exterior portion and an interior portion, the interior portion defining a receiving area for a child. A front area of the interior portion is generally open and a rear area of the interior portion is generally closed by a back section. A first means is positioned on the interior portion for securing a first strap thereto such that the first strap is positioned interiorly of the seat and is capable of extending both toward the front area and the rear area, and a second means is positioned on the interior portion for securing a second strap thereto such that the second strap is positioned

interiorly of the seat and is capable of facing both toward the front area and the rear area. The first and second means may be any one of a number of structures including, but not limited to, pivotably mounted strap end plates, pivotably mounted buckle tongues or buckle boxes, dual buckle tongue assemblies, and dual buckle box assemblies.

In another aspect of the invention, a method of positioning a child car seat in a rearward facing configuration in a vehicle including anchor points is provided. The child car seat includes an exterior portion and an interior portion, the interior portion defining a receiving area for a child. A front area of the interior portion is generally open and a rear area of the interior portion is generally closed by a back section. The method involves attaching a first strap to the interior portion of the child car seat, and attaching a second strap to the interior portion of the child car seat. The first strap is routed toward the front area and to a first vehicle anchor point, and the second strap is routed toward the front area and to a second vehicle anchor point. By connecting the straps interiorly on the child car seat and routing them toward the front of the seat, a better torque angle/distance for holding the child car seat in place and preventing rotation of the child car seat is provided.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of one embodiment of an child seat in accordance with the present invention positioned in a rearward facing configuration;

FIG. 2 is a perspective view of the child seat of FIG. 1 when positioned in a frontward facing configuration;

FIGS. 3A-3C are partial side elevational views of the child seat illustrating the pivotable connection between the seat securing strap and the side of the child seat;

FIG. 4 is an enlarged partial cross-sectional view along line 4-4 of FIG. 3A;

FIGS. 5-9 show alternative attachment structures;

FIG. 10 is a partial side elevational view of a car including anchors positioned interior of the line of engagement between the back portion of the seat bottom and the bottom portion of the seat back;

FIG. 11 is a front elevational view of an anchor; and

FIG. 12 is an illustration of an exemplary securing strap.

DETAILED DESCRIPTION

Referring to FIG. 1, a perspective view of one embodiment of a child car seat 10 in accordance with the present invention is shown, illustrating the child car seat in a rearward facing configuration relative to a rear seat portion 12 of a vehicle. The back portion of the vehicle rear seat is not shown in order to facilitate illustration. The child car seat 10 includes a seat portion 14, a back portion 16, and side portions 18 and 20, which collectively define an interior seating area for a child or toddler. A front area 15 of the child car seat is generally open while a rear area 17 of the child car seat is generally closed by back portion 16. The child car seat 10 is mounted to a detachable base 22 as is generally known in the art. However, it is understood that the present invention does not require the use of such a base 22.

Connected to an interior point of each side portion 18 and 20 of the car seat 10 is a respective securing strap 24 and 26 which is used to secure the child car seat 10 to the vehicle at respective anchors 28 and 30 provided on the vehicle.

Referring to securing strap 24, with the understanding that securing strap 26 is similarly configured, a first end of the securing strap 24 is attached to a mount plate 32 which

includes an opening therein. The mount plate 32 is pivotably connected through its opening to the interior side of the side portion 18 of the child car seat 10 through use of any suitable means such as pivot pins, nuts and bolts, or any other pivotable connection means, creating pivot point 40. A second end of the securing strap is connected to an attachment hook 34 which is configured to engage the anchor 28. The attachment hook 34 (FIG. 11) may generally include a curved finger portion 36 and resiliently biased retaining clip 38 which in combination form a passage for extending about the anchor 28 in a secure but removable manner. It is recognized that other types of attachment hooks could also be used.

Referring to FIG. 2, the child car seat 10 is illustrated in a frontward facing configuration relative to vehicle rear seat portion 12, with each strap 24 and 26 pivoted to extend in a rearward direction for attachment to anchors 28 and 30. Thus, the pivot point connection 40 provided for securing strap 24 (and securing strap 26) allows each strap to be easily pivoted or rotated about point 40 to enable the child car seat 10 to be attached in either the rearward or frontward facing configurations, utilizing the anchors 28 and 30 for attachment purposes in both configurations, without requiring distinct securing straps for the two different configurations.

Referring to FIGS. 3A-3C, the pivotable nature of the attachment straps is depicted. In particular, FIG. 3A illustrates a configuration in which attachment strap 24 extends rearward of the child car seat generally as shown in FIG. 2. FIG. 3B illustrates rearward extension of strap 24 in a more downward arrangement. FIG. 3C illustrates frontward extension of strap 24 as generally shown in FIG. 1. It is preferred that each attachment strap 24 be pivotable in 360° of motion as indicated by arrow 42 of FIG. 3A but it is contemplated that less than 360° of pivotable rotation could be suitable for the present invention. For example, rotation or pivot between the rearward extending configuration of FIG. 3A and the frontward extending configuration of FIG. 3C would not require rotation through a full 360°. The strap routings of FIGS. 3A and 3B are representative of a frontward facing installation such as that of FIG. 2, while the strap routing of FIG. 3C is representative of a rearward facing installation such as that of FIG. 1. By routing the strap frontward as shown in FIG. 3C and then down over a front portion of the child car seat, a downward force generally in the direction of arrow 33 is provided to prevent rotation of the child car seat in the direction indicated by arrow 35. Similarly, referring to FIG. 3A, the downward force 37 provided by the strap prevents rotation of the child car seat in the direction indicated by arrow 39.

Referring to FIGS. 1 and 2, the routing of securing straps 24 and 26 for both frontward and rearward facing configurations is shown. In the rearward facing configuration of FIG. 1 each securing strap extends frontward through a respective opening 44 from the interior to the exterior of the child car seat. Each strap then extends along an outer portion of the child car seat toward respective anchors 28 and 30. This strap routing from interior to exterior of the child car seat aids in preventing lateral movement of the child car seat 10 relative to the vehicle seat. In the frontward facing configuration of FIG. 2, each strap 24 and 26 extends rearward through an opening 46 in the side portion 18 and/or back portion 16, and then along an exterior rear portion of the child car seat 10 to the anchors 28 and 30. Similar to the rearward configuration, this strap routing from interior to exterior of the child car seat aids in preventing lateral movement of the child car seat 10 relative to the vehicle seat.

The cross-sectional view of FIG. 4 shows one possible pivotable connection for the mount plate 32. In particular, a hole 50 through side portion 20 is shown having an attachment member 52 extending therethrough. Attachment member 52 is shown as a rivet, but could be another type of member such as a bolt or pin. At an exterior side 54 of side portion 20, a washer 56 may be provided against which the exterior end 58 of member 52 rests. Interior end 60 of member 52 is spaced from the interior side 62 of side portion 20 to allow the mount plate 32 to be positioned therebetween with member 52 extending through a hole in mount plate 32. Sufficient space is provided to allow the mount plate 32 to rotate or pivot about member 52. Notably, side portion 20 may be formed with an increased wall thickness around the connection point to strengthen the connection if necessary.

FIGS. 5-9 illustrate alternative structures which could be utilized for connecting the straps at an interior location on the child car seat. Referring to FIG. 5, a dual buckle tongue assembly 60 is connected to the side portion of the child car seat such that one tongue 62 extends rearward and one tongue 64 extends frontward. The tongues connect to a buckle box 66 at the end of strap 24. FIG. 6 shows a dual buckle box assembly 70 connected to the side portion of the child car seat such that one buckle box 72 extends rearward and one buckle box 74 extends frontward. The buckle boxes receive a buckle tongue 76 at the end of the strap. FIGS. 7 and 8 show a pivotably connected buckle tongue 80 and a pivotably connected buckle box 82 respectively. FIG. 9 shows a rod or strap 86 connected at its ends to the child car seat. The strap 24 includes a slider member 88 at its end which loops around the rod or strap 86 to enable the strap 24 to be slid frontward or rearward as desired. Slider member 88 may be a loop of webbing material, for example. Further variations are possible, including pivotably mounted metal loops for connecting to an attachment hook at the end of the strap, or multiple metal loops.

All of the above structures, as well as others could be utilized to mount straps interiorly on the child car seat in a manner that enables the straps to extend both frontward and rearward. While the illustrated embodiments show the mounting positions along the side portions of the child car seat, it is recognized that many of the advantages could be achieved by mounting the straps at other interior locations on the child car seat and all such interior mounts are considered to be within the scope of the broader aspects of the invention.

FIG. 10 illustrates the relative position of the anchors with respect to the vehicle seat 12, the anchors being positioned inward of the line of contact between the back of the seat portion and the bottom of the back portion. As shown in the front elevation of FIG. 11, each anchor 28 may be of a generally U-shaped configuration which is welded to a relatively stable portion of the vehicle. Of course, other configurations of the anchors might be provided and the child car seat described herein would be equally useful with such anchors.

In order to more reliably attach each securing strap 24 and 26 to the car seat 10 it is preferred that a wall thickness of the side portion 18 and 20 of the car seat 10 in the area of the connection point be greater than that of more outlying areas of each respective side portion 18 and 20 as previously noted with respect to FIG. 4. Likewise, the wall thickness of the seat portions in the region around the openings 44 and 46 where the straps extend, may also be formed with a greater thickness than other portions for added strength as necessary. Alternatively, the region around the openings 44 and 46 could be strengthened, if necessary, by securing strengthen-

ing plates therearound using, for example, an adhesive or attachment members such as bolts, screws or rivots. It is contemplated that in one embodiment the car seat 10 would be formed of a molded plastic material as is known in the art. However, other materials and techniques could be used to form a suitable car seat in accordance with the present invention.

Each securing strap 24 and 26 is preferably adjustable in length to enable the child car seat 10 to be tightly secured to automobiles having varying seat configurations. In this regard, reference is made to FIG. 12 which illustrates one possible embodiment of such an adjustable securing strap 24 where the securing strap 24 includes a first portion 90 connected to the attachment plate 32 and extending to an adjustment buckle 92. A second strap portion 94 extends between the buckle 92 and the attachment hook 34. The overall length of the securing strap 24 can be adjusted by adjusting the length of the strap portion 90 extending between plate 32 and buckle 92 as is known in the art. Although use of an attachment plate 32 is shown in the primary embodiment, it is recognized that, with a strap of suitable strength the strap could be directly connected to the interior side portion of the car seat by, for example, using an eyelet associated with the strap.

It is also recognized that typically a seat in accordance with the present invention may include a padded, removable seat cover as is known in the art and in such cases the portions of the securing straps routed interiorly would preferably be positioned beneath the seat cover.

While the forms of the apparatus herein described constitute preferred embodiments of the invention, it is to be understood that the invention is not limited to these precise forms of apparatus, and changes may be made therein without departing from the scope of the invention.

What is claimed is:

1. A child car seat for installation in a vehicle including anchor points, the car seat mountable to an automobile seat in both a frontward facing configuration and a rearward facing configuration, comprising:

an exterior portion and an interior portion, the interior portion defining a receiving area for a child, a front area of the interior portion being generally open and a rear area of the interior portion being generally closed by a back section;

first means positioned on the interior portion for securing a first seat securing strap thereto such that the first seat securing strap is positioned interiorly of the seat and is capable of extending both toward the front area and the back area;

second means positioned on the interior portion for securing a second seat securing strap thereto such that the second strap is positioned interiorly of the seat and is capable of extending both toward the front area and the rear area;

wherein, when mounted in the frontward facing configuration the first and second seat securing straps extend toward the rear area for attachment to respective vehicle anchor points; and

wherein, when mounted in the rearward facing configuration the first and second seat securing straps extend toward the front area for attachment to respective vehicle anchor points.

2. The child car seat of claim 1, further comprising:

a first opening extending from the interior portion to the exterior portion of the seat and positioned toward the frontward area, a second opening extending from the

interior portion to the exterior portion of the seat and positioned toward the rearward area, a third opening extending from the interior portion to the exterior portion of the seat and positioned toward the frontward area, and a fourth opening extending from the interior portion to the exterior portion of the seat and positioned toward the rearward area;

wherein when mounted in the frontward facing configuration the first and second seat securing straps extend respectively through the second and fourth openings, and wherein when mounted in the rearward facing configuration the first and second seat securing straps extend respectively through the first and third openings.

3. The child car seat of claim 1 wherein the first means comprises a first attachment plate secured to the first seat securing strap, the first attachment plate pivotably mounted to the interior portion of the child car seat, and wherein the second means comprises a second attachment plate secured to the second seat securing strap, the second attachment plate pivotably mounted to the interior portion of the child car seat.

4. The child car seat of claim 1 wherein the first means comprises a first buckle tongue pivotably mounted to the interior portion of the child car seat, and wherein the second means comprises a second buckle tongue pivotably mounted to the interior portion of the child car seat, the first seat securing strap including a first buckle box for matingly attaching to the first buckle tongue and the second seat securing strap including a second buckle box for matingly attaching to the second buckle tongue.

5. The child car seat of claim 1 wherein the first means comprises a first multi-tongue assembly connected to the interior portion of the child car seat and the second means comprises a second multi-tongue assembly connected to the interior portion of the child car seat, the first seat securing strap including a first buckle box for matingly attaching to the first multi-tongue assembly and the second seat securing strap including a second buckle box for matingly attaching to the second multi-tongue assembly.

6. The child car seat of claim 1 wherein the first means comprises a first buckle box pivotably mounted to the interior portion of the child car seat, and wherein the second means comprises a second buckle box pivotably mounted to the interior portion of the child car seat, the first seat securing strap including a first buckle tongue for matingly attaching to the first buckle box and the second seat securing strap including a second buckle tongue for matingly attaching to the second buckle box.

7. The child car seat of claim 1 wherein the first means comprises a first multi-buckle box assembly connected to the interior portion of the child car seat and the second means comprises a second multi-buckle box assembly connected to the interior portion of the child car seat, the first seat securing strap including a first buckle tongue for matingly attaching to the first multi-buckle box assembly and the second seat securing strap including a second buckle tongue for matingly attaching to the second multi-buckle box assembly.

8. The child car seat of claim 1 wherein the first means is pivotably connected to the interior portion of the child car seat and the second means is pivotably connected to the interior portion of the child car seat.

9. A child car seat for installation in an automobile including anchor points, the car seat mountable to an automobile seat in both a frontward facing configuration and a rearward facing configuration, comprising:

a seat portion, a back portion and first and second side portions defining an interior child receiving area;

a first securing strap pivotably connected at an interior position on the first side portion;
 a second securing strap pivotably connected at an interior position on the second side portion;
 wherein, when mounted in the forward facing configuration the first and second straps extend from their respective car seat side portions in a rearward direction for attachment to respective anchor points; and
 wherein, when mounted in the rearward facing configuration the first and second straps extend from their respective car seat side portions in a frontward direction for attachment to respective anchor points.
 10
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 10. The child car seat of claim 9 wherein the first securing strap includes a first end connected to a first attachment plate and the first attachment plate is pivotably connected to the first side portion of the car seat, and the second securing strap includes a first end connected to a second attachment plate and the second attachment plate is pivotably connected to the second side portion of the car seat.

11. The child car seat of claim 10 wherein the first securing strap includes a second end having a first anchor attachment hook connected thereto, and the second securing strap includes a second end having a second anchor attachment hook connected thereto.

12. The child car seat of claim 9 wherein a first opening is provided in the first side portion toward a front of the child car seat, wherein a second opening is provided in at least one of the first side portion and the back portion near a rear of the child car seat, wherein a third opening is provided in the second side portion toward the front of the child car seat, wherein a fourth opening is provided in at least one of the second side portion and the back portion near the rear of the child car seat, wherein when mounted in the forward facing configuration the first and second securing straps extend respectively through the second and fourth openings, and wherein when mounted in the rearward facing configuration the first and second securing straps extend respectively through the first and third openings.

13. A child car seat for installation in a vehicle including anchor points, the car seat mountable to an automobile seat in both a forward facing configuration and a rearward facing configuration, comprising:

an exterior portion and an interior portion, the interior portion defining a receiving area for a child, a front area of the interior portion being generally open and a rear area of the interior portion being generally closed by a back section, a first opening extending from the interior portion to the exterior portion of the seat and positioned toward the front area, a second opening extending from the interior portion to the exterior portion of the seat and positioned toward the rear area, a third opening extending from the interior portion to the exterior portion of the seat and positioned toward the front area, and a fourth opening extending from the interior portion to the exterior portion of the seat and positioned toward the rear area;

first means positioned on the interior portion for securing a first strap thereto such that the first strap is positioned interiorly of the seat and is capable of extending both toward the front area and the back area;

second means positioned on the interior portion for securing a second strap thereto such that the second strap is positioned interiorly of the seat and is capable of facing both toward the front area and the rear area;

wherein, when mounted in the forward facing configuration the first and second straps extend respectively through the second and fourth openings for attachment to respective vehicle anchor points; and

wherein, when mounted in the rearward facing configuration the first and second straps extend respectively through the first and third openings for attachment to respective vehicle anchor points.

* * * * *



US005713630A

United States Patent [19]
Kvalvik

[11] **Patent Number:** 5,713,630
[45] **Date of Patent:** Feb. 3, 1998

[54] **CHILD'S SEATING RESTRAINT**1032588 6/1966 United Kingdom 297/255
1176417 1/1970 United Kingdom .[76] **Inventor:** Prerna J. Kvalvik, 1108 Lawrence St.,
New London, Wis. 54961-1849

Primary Examiner—Milton Nelson, Jr.
Attorney, Agent, or Firm—Richard C. Litman

[21] **Appl. No.:** 740,144[57] **ABSTRACT**[22] **Filed:** Oct. 22, 1996

A child's seating restraint is removably attachable to a stationary article of furniture, such as a couch, sofa, or similar furniture typically found in the household. The restraint in turn provides for the removable securing of an infant, toddler, or small child thereto, to prevent the child from falling from the furniture inadvertently. The seating restraint comprises a belt having a plurality of pins, ties, or other attachment devices permanently secured to the back portion thereof, and used to secure the belt to the furniture. A continuous, unitary seat bottom and seat back portion, preferably formed of a soft, pliable, resilient and washable material such as a closed cell foam plastic or the like, may be added to the belt if desired. A washable fabric cover may be provided for the seat bottom and/or seat back portion of the device, if desired. A crotch strap may be attached to the belt (or beneath the seat bottom), to extend from the back of the belt (or from the seat bottom) to a front loop through which the belt portions are passed. An alternate embodiment includes only a seat bottom portion, with the child restraining belt being secured to the bottom portion near its rearward edge. The present child seating restraint, in any of its embodiments, provides a convenient and economical method for a parent or guardian to keep track of a small child which is beginning to develop mobility, while assuring that the child does not endanger him or herself.

[51] **Int. Cl.:** A47C 1/08
[52] **U.S. Cl.:** 297/254; 297/467
[58] **Field of Search:** 297/467. 250.1.
297/254. 255. 219.12. 229. 219.1. DIG. 1

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9 Claims, 4 Drawing Sheets

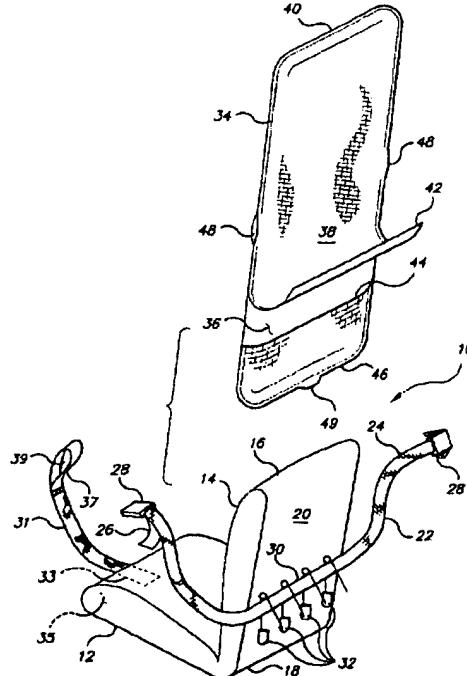


FIG. 1

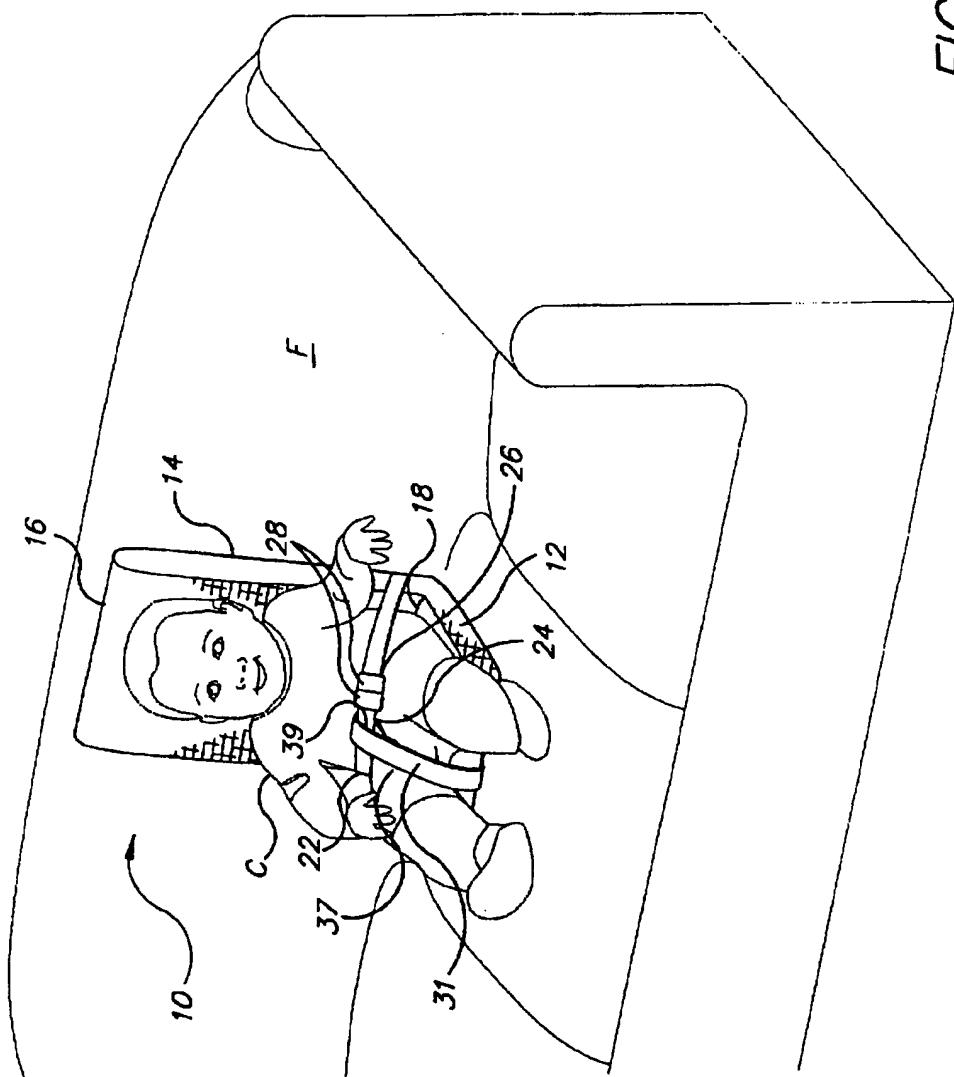
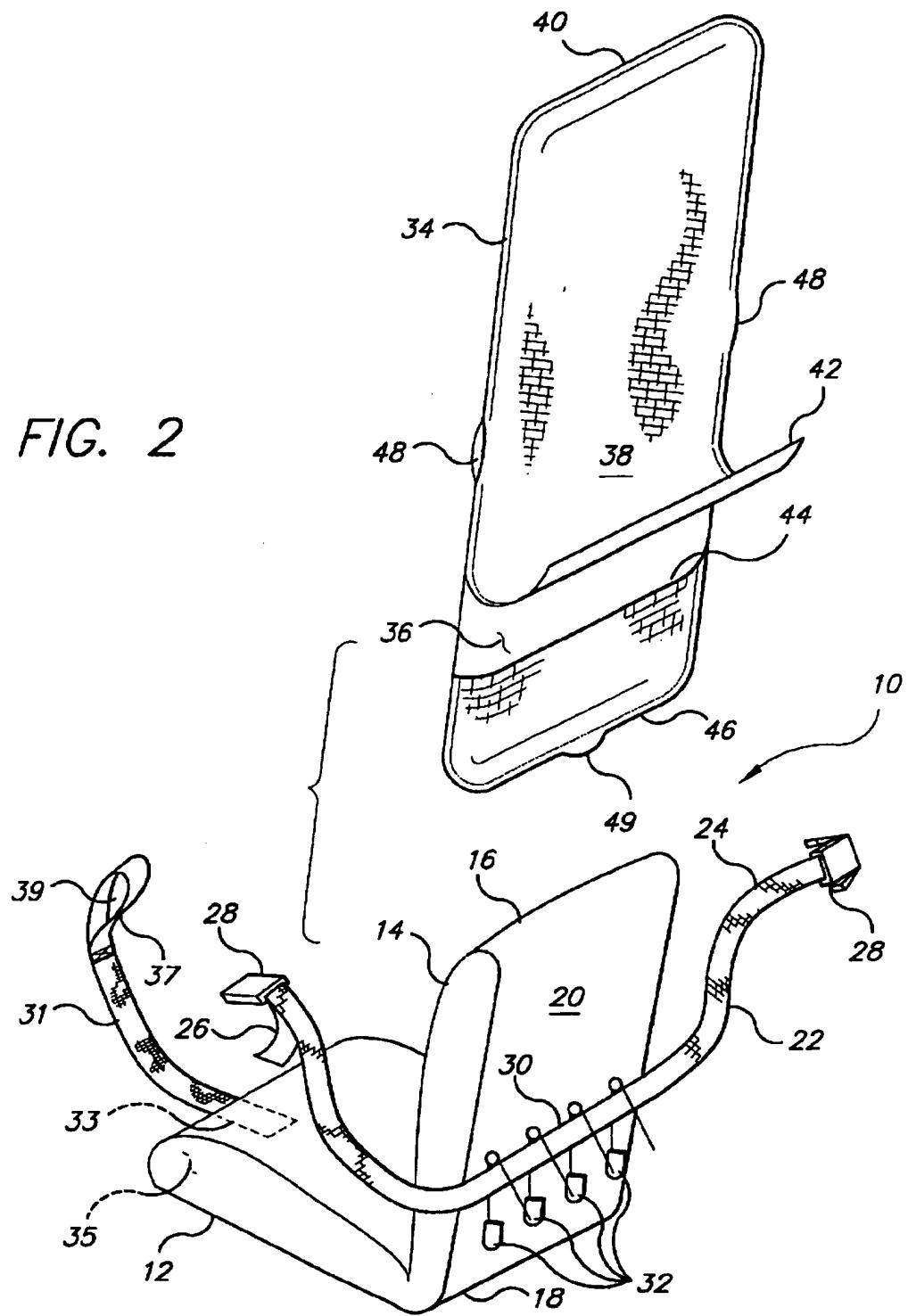


FIG. 2



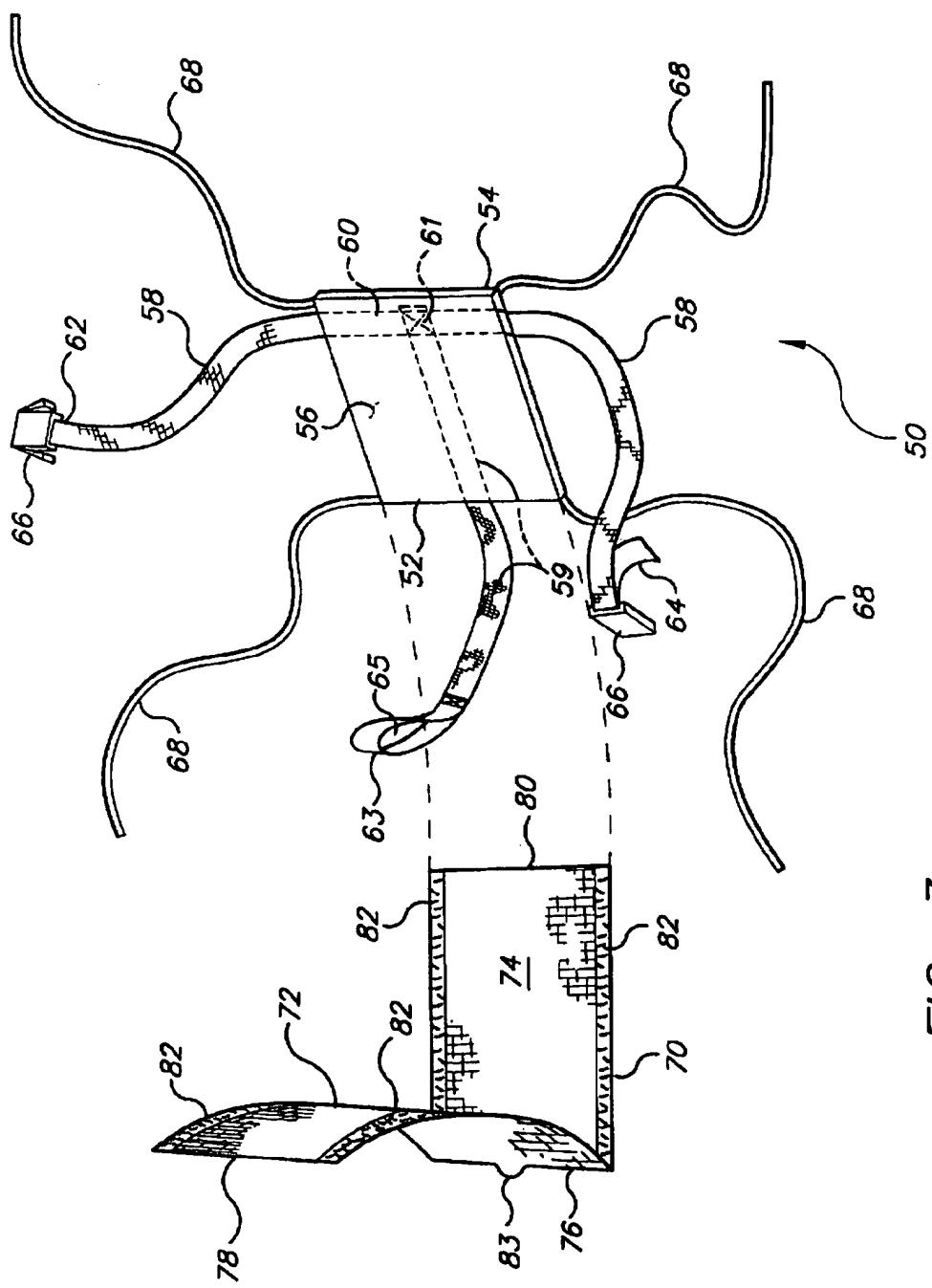


FIG. 3

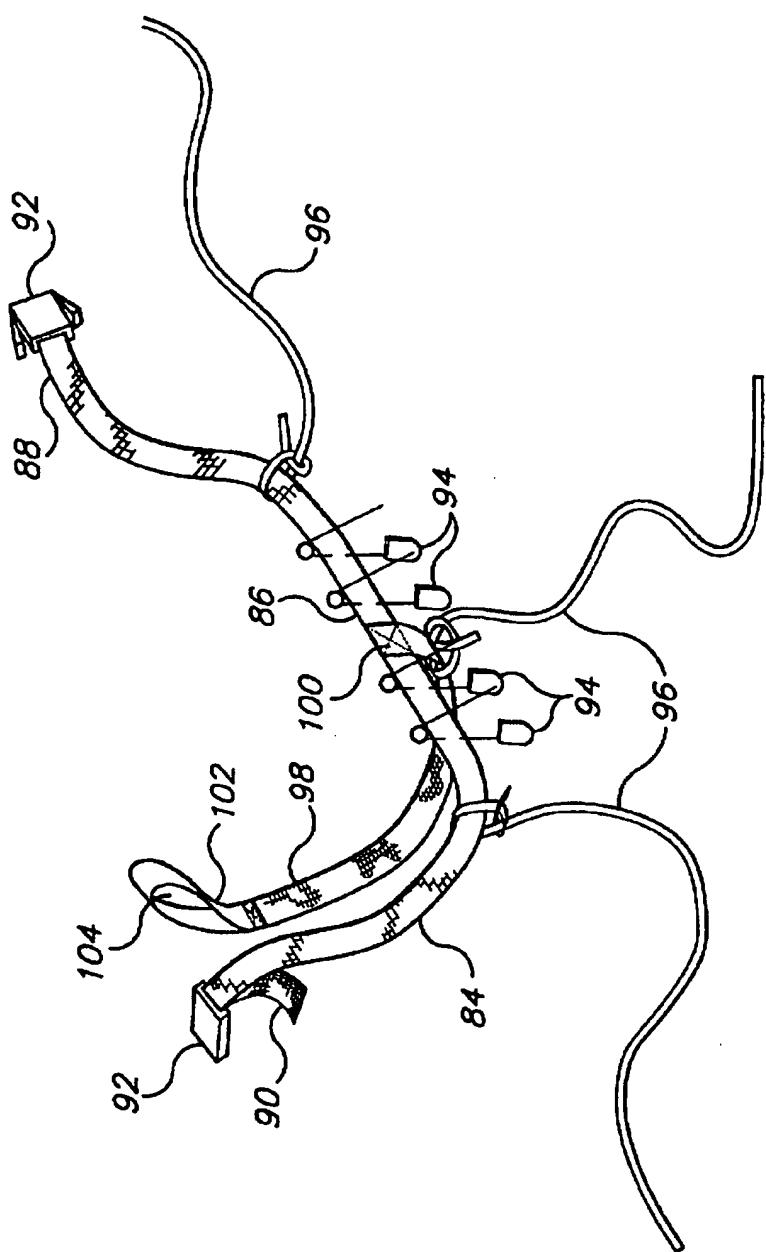


FIG. 4

CHILD'S SEATING RESTRAINT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to seat belts, harnesses, and other restraining devices for infants, toddlers, and small children, and more specifically to a restraint which is adapted to be removably secured to an article of furniture such as a couch or upholstered chair or the like. The restraint generally comprises a belt portion including furniture attachment means thereon. The belt may include a seat portion attached thereto, with the seat portion being removably attachable to the couch or chair. An infant, toddler, or small child may be secured to the furniture by means of the restraint, to prevent the child from crawling and falling from the couch or chair.

2. Description of the Prior Art

Parents of small children, particularly infants who have progressed to crawling and toddlers just starting to walk, are well aware of the difficulty in keeping track of such children as they begin to explore their surroundings. Not only are there many potentially hazardous areas such children may encounter as they wander through the typical home, but the very act of climbing to or from an article of furniture may result in a fall and injury to the child.

Many parents will place a small child on a sofa, chair, or other furniture, and then become distracted by a visitor, phone call, or other task. Meanwhile, the seated child may attempt to climb down from the couch or other furnishing upon which he or she was placed. While the typical seat of such furniture may only be some eighteen inches or so above the floor, this can be a significant height for a toddler or small child, and such a small child is at risk of potential serious injury from such a fall.

Various restraints exist for infants, toddlers, and small children, ranging from infant seats for automobiles and aircraft, to playpens, to safety straps for use with high chairs, to leashes and harnesses to prevent a child from wandering while the parent or guardian is walking with the child. Yet, no suitable restraint has yet been devised to secure a toddler or small child to an existing article of furniture. Accordingly, a need will be seen for a restraint which may be removably secured to upholstered furnishing without damage thereto. The restraint comprises at least a belt which may be removably secured to an article of furniture, and may include a seat bottom and back portion as well, which may be enclosed in a washable cover, if desired. It should be noted that the present restraint is not adapted to absorb large forces, as might be encountered in vehicle accident, but the attachment means (pins and/or ties) serve well to secure the restraint adequately to upholstered or other furniture in the home. A discussion of the prior art of which the present inventor is aware, and its differences from the present invention, is provided below.

U.S. Pat. No. 1,373,200 issued on Mar. 29, 1921 to Olaf K. Pacht describes a Seat formed of a single sheet of "stiff fibrous material" (p. 1, l. 67) which is adapted to be secured removably to a vehicle seat and to move unitarily with vehicle motion, rather than having a separate seat bottom and seat back, as in a conventional automobile seat. Straps are used to secure the device between the automobile seat bottom and seat back, and a supplemental retaining flap secures the upper edge of the seat back portion to the vehicle seat back. No restraining strap is disclosed for a person seated thereon, as provided by the present seating restraint, and the stiff material used is unlike the resilient foam or

other upholstered material used for the seat bottom and back portions of the present seating restraint.

U.S. Pat. No. 2,851,084 issued on Sep. 9, 1958 to Louis Benjetsky describes a Child's Demountable Auto Seat comprising a unitary seat bottom and seat back formed of rigid and inflexible material, unlike the present seat restraint. The Benjetsky seat cannot be folded, as provided by the present seat. Benjetsky provides additional restraint bars and a chest strap, as well as rigid seat back attachment hooks, all of which are beyond the scope of the present invention, which is adapted only to secure a toddler or small child to a stationary seat in a residence or other fixed structure. Benjetsky must provide a seat which is much stronger structurally, in order to withstand acceleration forces which may be encountered in a collision. The present seating restraint is not adapted for use in automobiles.

U.S. Pat. No. 4,235,474 issued on Nov. 25, 1980 to Linda H. Rosenberg describes a Harness For Retaining A Baby In A Chair, comprising a back portion with an upper pocket adapted to fit over the back of a chair. This arrangement precludes use of the harness on a wider chair, couch, sofa, or the like, as provided by the present seating restraint. The relatively narrow strap which passes beneath the baby and between the legs provides little support for the child, and serves merely as a means of connecting a tie to the device. The tie must be secured behind the chair, rather than at the front of the child, as provided by the present invention. Also, Rosenberg fails to provide any means of attaching the lower portion of her harness to the chair, whereas the present seating restraint secures at the lower back portion thereof or at the juncture of the seat bottom and seat back portions, to better centralize the attachment forces.

U.S. Pat. No. 4,759,588 issued on Jul. 26, 1988 to Monte J. Husnik describes a Seat Belt Training Cushion comprising seat bottom and back portions hinged together. The description of a hinge to secure the two portions together implies the use of rigid materials therefor, unlike the flexible, resilient materials of the present seating. Moreover, Husnik requires use of an existing automobile seat belt assembly to secure the child within his device, as the two arms provided by Husnik are not adapted to restrain the child within the seat, but only to camouflage the automobile belts. Husnik must rely upon the existing automotive belts to secure his device, as he does not provide attachment means.

U.S. Pat. No. 4,874,203 issued on Oct. 17, 1989 to Alvera S. Henley describes a Vehicle Passenger Seat For Handicapped Persons, comprising a rigid structure including a tubular frame and/or rigid sheet metal structure, unlike the foldable, resilient material of the present seating restraint. The Henley seat includes a foot rest in all embodiments, as well as arm rests in at least some embodiments. The device requires a separate anchor in the floor of the vehicle, behind the seat, for attachment of the Henley seat in the vehicle. The present seating restraint requires no additional components secured either to the seating or to the adjacent structure, as required by Henley. Again, the present seating restraint is not adapted for use in an automobile, and thus is considerably lighter and more compact than the Henley device.

U.S. Pat. No. 5,354,121 issued on Oct. 11, 1994 to Rita J. Allum describes a Support And Restraint Device For Small Child, comprising a pair of foam cushions removably enclosed in adjoining fabric pockets forming separate seat bottom and seat back portions. Two straps are provided to secure the back portion to a chair. A restraining belt and crotch strap are provided to removably secure a small child

to the device, but Allum attaches the crotch strap to the upper surface of the seat cushion or lower belt, rather than to the underside for greater comfort, as in the present invention. The Allum device is unsuited for use on wide and/or upholstered furniture, due to the relatively short attachment straps and lack of provision of pins or the like to secure to an upholstered article, as provided by the present seating restraint.

U.S. Pat. No. 5,499,860 issued on Mar. 19, 1996 to Raymond Smith et al. describes a Collapsible Child Seat having a sleeve secured to the seat back portion, which passes over the back of a chair or other seat to support the device. The seat bottom is suspended from the seat back sleeve portion by a belt which passes beneath the seat bottom. The seat bottom is thus formed of a rigid material, in order to provide such suspension above the supporting chair by the belt from the seat back sleeve. The present seating restraint is adapted to be placed directly upon a chair, couch, sofa, or similar upholstered furniture which may provide sufficient length for seating more than one person. The Smith et al. device is not adapted for such use, as the size of the seat back sleeve would prove impractical for attachment to such larger articles of furniture.

British Patent Publication No. 815,007 published on Jun. 17, 1959 to Norman Hartell describes Improvements In Or Relating To Seats For Infants, comprising a rigid tubular frame with laterally adjustable attachment hooks thereon. The frame includes a foot rest, unlike the present seating restraint. Such a depending foot rest would preclude the resting of the bottom portion of the frame and its associated seat bottom directly upon the underlying seat or chair surface, as provided by the present seating restraint. The seat back and bottom portions are apparently formed of hard and rigid sheets of material, as they are described as being padded. It would appear that no such padding would be required for resilient materials.

Finally, British Patent Publication No. 1,176,417 published on Jan. 1, 1970 to Wardour Imports Ltd. describes Improvements In And Relating To Infant Chairs, comprising a steel tube frame having hard plastic seat bottom and seat back panels removably clipped thereto. One embodiment includes a pair of upwardly and rearwardly disposed hooks and is adapted to be supported from a chair back or the like, similarly to other devices discussed above. The use of hooks for support of the device would require at least a rigid frame, if not a rigid seating surface, as the device would be suspended above the seating surface of the supporting chair if the supporting chair has a higher back. No other means is provided to secure the device to a supporting chair or other structure.

None of the above inventions and patents, taken either singly or in combination, is seen to describe the instant invention as claimed.

SUMMARY OF THE INVENTION

Accordingly, it is a principal object of the invention to provide an improved child's seating restraint which is adapted to be removably secured to a fixed article of furniture and in turn to secure an infant or small child removably thereto.

It is another object of the invention to provide an improved child's seating restraint comprising a belt and crotch strap which restraint may include a seat bottom portion and seat back portion, which portions are formed of a pliable, flexible, and resilient material to provide for the comfort of the child seated therein.

It is a further object of the invention to provide an improved child's seating device which may include a removable cover for the seat bottom and/or seat back portion, which cover is washable.

An additional object of the invention is to provide an improved child's seating restraint which may be secured to the article of furniture by means of pins, ties, or other means which result in no permanent damage to the furniture or requirement for mating attachment means to be applied to the furniture.

It is an object of the invention to provide improved elements and arrangements thereof in an apparatus for the purposes described which is inexpensive, dependable and fully effective in accomplishing its intended purposes.

These and other objects of the present invention will become apparent upon review of the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an environmental perspective view of the present child's seating restraint, showing its general configuration.

FIG. 2 is an exploded rear perspective view of the child's seating restraint of FIG. 1, showing the removable cover therefor and further details.

FIG. 3 is an exploded perspective view of an alternate embodiment of the present child's seating restraint, showing details thereof.

FIG. 4 is a perspective view of a further alternative embodiment, wherein the seat bottom and back portions are deleted.

Similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention comprises a child's seating restraint, a first embodiment of which is shown in FIGS. 1 and 2 and which is generally designated by the numeral 10. The seating restraint 10 is preferably formed of a single, unitary, generally rectangular, pliable, foldable, and resilient cushion having a seat bottom portion 12 and a seat back portion 14, with the seat back portion 14 having an upper edge 16, an opposite lower edge 18, and a rear surface 20 (FIG. 2). It has been found that a washable closed cell foam plastic material works well for such a seating restraint 10, but other materials (e.g., an envelope filled with cotton or synthetic fiber batting, etc.) may be used as desired.

A single, continuous child restraint belt 22 is secured to the seat back portion 14, with the belt 22 having a first end 24 and an opposite second end 26 each equipped with some form of preferably adjustable mutual attachment means, e.g., mating first and second side latch buckle components 28, or other means as desired. The central portion 30 of the restraint belt 22 is preferably secured across the rear surface 20 of the seat back portion 14 of the cushion, adjacent the lower edge 18 of the seat back portion, as shown in FIG. 2. It will be seen that the belt 22 may be secured to the cushion using any one of a number of means, such as stitching, adhesive attachment, or the central portion 30 of the belt 22 may be encapsulated integrally with the cushion when the cushion is formed of a closed cell foam plastic material, as is the case in the preferred embodiments.

A crotch strap 31 has an attachment end 33 which is securely attached (stitching, adhesive, etc.) to the underside 35 of the seat bottom portion 12 of the restraint 10, as shown

in FIG. 2. The attachment end 33 may be extended rearwardly to secure to the central portion 30 of the belt 22, if desired, and as shown in the embodiment of FIG. 3. The opposite free end 37 of the crotch strap 31 has a belt passage loop 39 formed therein, providing for the passage of the belt 22 therethrough to prevent a child within the restraint 10 from sliding downward in the restraint 10 when the belt 22 is secured in the manner shown in FIG. 1. The crotch strap 31 may be formed of the same material as the belt 22, e.g., a synthetic woven fabric webbing, or other suitable material as desired.

A series of attachment means or devices is secured generally to the rear 20 of the seat back portion 14 of the cushion, adjacent the lower edge 18 thereof, and extend rearwardly therefrom. A plurality of pins, such as the protected point or safety pins 32 shown in FIG. 2, may be used. Such pins 32 provide for ease of attachment of the present seating restraint 10 to an upholstered stationary article of furniture having a fabric or woven finish, such as the household furniture F of FIG. 1, without damaging or marring the outer finish thereof. The pins 32 may be secured directly to the central portion 30 of the restraining belt 22, thus securing the belt 22 and the cushion to which the belt 22 is secured, to the couch, sofa, or other furniture F. Such safety pins 32 provide a safe means of attachment, as the pin points may be enclosed in the heads of the pins to preclude their working loose and/or allowing a child to injure him/herself inadvertently.

It will be seen that additional furniture attachment means may be added to other portions of the seating restraint 10 if desired, and/or that other types of attachment means (e.g., the ties shown in the embodiment of FIG. 3) may be used in lieu of or in addition to the pins 32 shown in FIG. 2. By using a plurality of pins 32 distributed across the lower rear portion of the cushion, the present seating restraint 10 may be secured to any article of upholstered furniture (couch, sofa, upholstered chair, etc.) regardless of its width, as the attachment means is not dependent upon the width of the furniture. Sufficiently long ties will also suffice for attachment to wider articles of furniture.

FIG. 2 also discloses a removable cover 34 which may be provided for the seating restraint 10, if desired. Preferably, the cover 34 is formed of a washable natural or synthetic fiber fabric material (e.g., cotton, etc.), for comfort and economy. Such fabrics may be washed conventionally with other laundry, as desired. The washable closed cell foam material used for the cushion of the seating restraint may be wiped down easily using soap and water, as required.

The cover 34 of FIG. 2 is formed of congruent first and second sheets of material, respectively 36 and 38, which are secured together (stitched, etc.) along their mutual periphery. The secured periphery is discontinuous, in that they are secured together at their mutual first ends 40 and along the sides or edges adjacent thereto, but the second end 42 of the second sheet 38 comprises a free flap of material which is not directly secured to the first sheet 36. The first sheet 36 includes a pocket 44 extending across the second end 46 thereof, which is adapted to receive the flap 42 of the second sheet 38. Thus, the cover 34 may be opened at the second end(s) thereof, and slipped over the seat bottom and seat back portions 12 and 14 comprising the cushion of the seating restraint 10. The restraining belt ends 24/26 and crotch strap free end 37 are respectively passed through the belt passages 48 and crotch strap passage 49 provided along the peripheral edges of the cover 34. The cover pocket 44 is then slipped over the end of the cushion, and the free flap 42 is tucked into the pocket 44 to secure the cover around the

cushion. Removal of the cover 34 is essentially the reverse of the above described operation.

FIG. 3 discloses an alternative embodiment of the present restraint, comprising a seat bottom cushion 50 devoid of any back portion. The cushion 50 is formed similarly to the seating restraint cushion 10 of FIGS. 1 and 2, in that it is a generally rectangular, pliable, foldable, resilient unit preferably formed of a washable closed cell foam plastic material. The cushion 50 includes at least a forward edge 52, rearward edge 54, and lower surface 56, having a single, continuous child restraint belt 58, similar to the belt 22 of FIGS. 1 and 2 with a central portion 60 secured to the lower surface 56 of the cushion 50 adjacent the rearward edge 54 thereof. The opposite first and second ends 62/64 of the belt 58 may be equipped similarly to the belt 22 of FIGS. 1 and 2, with mating attachment or buckle means 66 extending therefrom to provide for the adjustable closure of the belt 58.

A crotch strap 59 has an attachment end 61, extending beneath the underside 56 of the cushion 50 to secure to the central portion 60 of the belt 58, adjacent the rearward edge 54 of the cushion 50. (The crotch strap 59 may be secured to the cushion underside 56 in lieu of or in addition to its attachment to the belt 58, but mutual attachment of the belt 58 and crotch strap 59 provides greater structural integrity for the cushion restraint embodiment 50.) The crotch strap 59 has an opposite free end 63 including a belt loop 65 formed therein, and functioning similarly to the belt loop 39 of FIGS. 1 and 2.

As in the embodiment of FIGS. 1 and 2, some means must be provided to secure the cushion 50 to an underlying article of furniture. In FIG. 3, a plurality of furniture attachment means comprising a series of elongate ties 68 is provided. These ties 68 may be secured to the cushion 50 adjacent the forward edge 52 and/or rearward edge 54 thereof using attachment means similar to those described further above to secure the belt 22 to the back portion 14 of the seat restraint 10 of FIGS. 1 and 2. The ties 68 may be passed about the structure of the article of furniture to which the cushion 50 is to be secured, and tied in place as desired. It will be seen that the pins 32 of the seating restraint 10 may also be used with the cushion 50 of FIG. 3, if desired.

The cushion 50 of FIG. 3 may also be provided with a removable and washable fabric cover 70 if desired, similar to the cover 34 of the seating restraint 10 of FIGS. 1 and 2. The cover 70 of FIG. 3 is configured somewhat differently than the cover 34 of FIGS. 1 and 2, with the cover 70 being formed of congruent first and second sheets of material 72 and 74, each having a common first end 76 and respective second ends 78 and 80. The remaining free peripheral edges of the two sheets 72 and 74, i.e., those edges not permanently secured together along the common first end 76 of the two sheets 72 and 74, each include some form of mating attachment means 82 disposed therealong, e.g., mating hook and loop fastening material, a zipper, snaps, buttons and buttonholes, etc.

The cover 70 is secured about the cushion 50 by placing the cushion 50 between the two sheets 72 and 74, and securing the edges of the two sheets 72/74 together using the peripheral attachment means 82. A crotch strap passage 83 is provided in the common first end 76 of the cover 70, through which the free end 63 of the crotch strap 59 is passed when the cover 70 is installed over the cushion 50. Alternatively, it will be seen that the cover 70 may be turned around relative to the cushion 50, with the cover open second ends 78 and 80 providing for passage of the crotch strap 59 therebetween.

It will be seen that a zipper type closure would require several such units to provide intermittent gaps for clearance of the ties 68 and restraint belt 58, but that other closure means may be secured about the ties and belt with no problem. It will also be seen that the covers 34 and 70 of the two embodiments may be interchanged with the two cushion embodiments 10 and 50, merely by adjusting the cover length to fit the appropriate cushion 10 or 50 as desired. Also, while it is anticipated that the cushions 10/50 will normally be formed as a flat sheet, as shown in the cushion 50 of FIG. 3, a molded and contoured cushion as shown in FIG. 2 may be provided in either of the embodiments disclosed.

A further alternative embodiment is disclosed in FIG. 4, wherein the seat bottom and/or seat back cushions, and any cover means therefor, are deleted. In FIG. 4, a single, continuous child restraint belt 84, similar to the belts 22 and 58 of the first two embodiments, includes a central portion 86 and opposite first and second ends 88 and 90. The ends 88/90 of the belt 84 may be equipped similarly to the belt 22 and 58 of FIGS. 1 through 3, with mating attachment or buckle means 92 extending therefrom to provide for the adjustable closure of the belt 84.

The central portion 86 of the belt 84 includes some form of furniture or other article attachment means disposed thereon, such as the plural safety pins 94, and/or ties 96, similar to those means disclosed further above. Either pins 94 or ties 96, or both, may be provided with the belt 84 or with any of the other embodiments of the present invention, as desired.

As in the other embodiments discussed above, the belt 84 includes a crotch strap 98. The strap 98 has an attachment end 100, which is secured (stitching, rivets, etc.) to the central portion 86 of the belt 84, and an opposite free end 102 including a belt passage loop 104 formed therein, and functioning similarly to the belt passage loop 39 of FIGS. 1 and 2 and the belt passage loop 65 of FIG. 3.

The belt 84 is used similarly to the embodiments of FIGS. 1 through 3 discussed further above, by pinning, tying, or otherwise securing the belt 84 to the desired article of furniture, placing the child on the furniture at the location of the secured belt 84, passing one of the belt ends 88 or 90 through the belt passage loop 104 of the crotch strap 98, securing the belt 84 around the child's waist by means of the mating buckle ends 92, and adjusting the belt 84 as required, e.g., by means of the free end 90. The child will thus be held securely in place on the article of furniture to which the waist safety pins 94 and/or ties 96 has been secured by means of the belt 84, and is prevented from sliding downwardly through the belt 84 by means of the crotch strap 98 which is permanently affixed to the belt 84 at one strap end 100, and removably affixed to the belt 84 at the opposite strap end 102. When restraint of the child is no longer necessary, the seating restraint belt 84 may be easily removed by reversing the above steps, i.e., unfastening the latch members 92 from one another, removing the captured portion of the belt 84 from the crotch strap loop 104, and lifting the child free of the restraint. The belt 84 may then be unfastened from the furniture.

In summary, the present child's seating restraint, in any of its embodiments, will be seen to provide a most useful accessory for a person caring for a toddler or small child who is just beginning to develop mobility. The restraint may be secured easily to an article of furniture F, as shown in FIG. 1, by means of the pin attachments shown in FIGS. 2 and 4 or the alternative ties disclosed in FIGS. 3 and 4. As

with various other components of the present invention, the various attachment means disclosed may be applied to either of the two cushion embodiments or the belt embodiment disclosed herein. At this point, the infant, toddler, or small child C may be placed upon the seat bottom portion of the cushion and secured thereto, or placed directly upon the furniture and secured thereto, using the restraining belt and buckle arrangement disclosed. The parent or guardian of the child may then feel free to devote attention to other chores, without having to provide constant attention to the child to monitor his or her location and actions.

When the seating restraint is no longer required (as at the child's nap or bed time, meal time, etc.) the cover (if provided) may be quickly and easily removed and thrown in the wash, with other laundry. The embodiments incorporating a foam cushion may be easily wiped down as required, with the cover (if provided) quickly and easily reinstalled after cleaning. The present child's seating restraint, in any of its embodiments, is very light in weight and economical, and may be easily folded or rolled for storage as desired when not needed. Parents and guardians of small children will find the present child's seating restraint to be a most valuable article to assist them in caring and providing for children in their care.

It is to be understood that the present invention is not limited to the sole embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

I claim:

1. A child's seating restraint, comprising:
a single, unitary, generally rectangular, pliable, foldable, and resilient cushion having a seat bottom portion and a seat back portion, with said seat back portion having an upper edge, an opposite lower edge, and a rear surface;
2. The child's seating restraint according to claim 1, wherein:
said furniture attachment means are secured to and extend from said central portion of said restraint belt.
3. The child's seating restraint according to claim 1, wherein:
said furniture attachment means are selected from the group consisting of safety pins, ties, and a combination of safety pins and ties.
4. The child's seating restraint according to claim 1, including:
a cover removably installable over said seat back portion and said seat bottom portion.
5. The child's seating restraint according to claim 4, wherein:
said cover is formed of a washable fabric material.

6. The child's seating restraint according to claim 4, wherein:

said cover comprises a first sheet of material with a congruent second sheet of material secured peripherally and discontinuously thereto, and;

each said sheet having a first end and an opposite second end, with said first end of said first sheet having a pocket extending thereacross and said first end of said second sheet comprising a free flap adapted to be selectively tucked within said pocket to secure said cover about said cushion.

7. The child's seating restraint according to claim 4, wherein:

said cover comprises a congruent first and second sheet of material each having a first end and a second end, with

each said sheet being secured together along each said first end thereof;

said first sheet and said second sheet each having a partial free peripheral edge, with each said edge including mating attachment means disposed therealong providing for the closure of said cover about said cushion.

8. The child's seating restraint according to claim 1, wherein:

said cushion is washable.

9. The child's seating restraint according to claim 1, wherein:

said cushion is formed of closed cell foam plastic material.

* * * * *